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Notes on a Collection of Reptiles and Amphibians from Northwestern Sonora*

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In the course of our field work in southern Arizona during the latter part of the summer of 1948 we had an opportunity to make a one-day collecting trip into Sonora, Mexico. On August 9, early in the day (8:30 A.M. to 1:30 P.M.) we drove from the border southwestward through Sonoyta to Puerto Peñasco on the east shore of the Gulf of California, a distance of 66 miles. In the afternoon a trip was made 33 miles northeast on the same highway and then back to Puerto Peñasco. In the evening (7:30 to 10:00 P.M.) we made the return trip northeastward to the border. Collections were made at irregular intervals along the way within one-half mile of the road. In addition, the senior author collected on the highway southwest of Sonoyta for a distance of 20 and 29 miles, respectively, from 9:30 to 12:00 P.M. on July 29 and from 8:15 to 11:30 P.M. on August 8.

The localities in which collections were made are in a very significant area which has been neglected by herpetological collectors. Our collection of only 79 specimens includes 16 species and subspecies of reptiles and amphibians of which four—*Bufo cognatus*, *Callisaurus draconoides ventralis*, *Cnemidophorus tessellatus tessellatus*, and *Chionactis occipitalis annulata*—constitute the first definite records of these forms in Sonora. Light is thrown on a number of problems regarding the distribution and differentiation of these and related forms.

All of the specimens have been deposited in the University of Illinois Museum of Natural History, whose catalog number is cited for each specimen.

We are greatly indebted to Dr. Hobart M. Smith for the use of his herpetological library and his extensive index to the literature on Mexican species and for his advice in the problems which confronted us. However, any errors which appear are the responsibility of the authors. Our sincere

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thanks are also due to Dr. Frederick A. Shannon for valuable assistance in the identification of our specimens and to Dr. D. F. Hoffmeister for provision of the facilities of the University of Illinois Museum of Natural History.

Scaphiopus couchii **Baird**

31 miles s.w. of Sonoyta, en route to Puerto Peñasco (1856).

A small adult of this species was found alive on the highway at approximately 9:00 P.M., August 9.

Bufo alvarius **Girard**

1.4 miles s.w. of Sonoyta (1857).

A large individual was found floating in an irrigation pond in the midst of a large breeding chorus of *Bufo cognatus*, at 11:30 P.M., July 29.

Bufo cognatus **Say**

1.4 miles s.w. of Sonoyta (1858-66); 1.8 miles s.w. of Sonoyta (1867); 2.1 miles s.w. of Sonoyta (1868).

On the evening of July 29, at 11:30 P.M., a breeding chorus of approximately 75 was found in an irrigation pond 1.4 miles southwest of Sonoyta. Most of the toads seen were males calling from the bank just above the water line, but there were at least a dozen clasping pairs floating in the pond. A smaller chorus of toads of this species was seen in a shallow ditch nearby. The two other specimens listed above were found alive on the highway, August 9 at 9:30 P.M. and August 8 at 8:35 P.M., respectively. These records seem to be the first for *Bufo cognatus* in the state of Sonora.

Dipsosaurus dorsalis dorsalis **Baird and Girard**

26 miles s.w. of Sonoyta (1869, 1871-85, 1888); 25 miles s.w. of Sonoyta (1886-7); 23 miles s.w. of Sonoyta (1870).

These specimens of *Dipsosaurus dorsalis dorsalis* are of special interest because they constitute fairly large series from the general area in which Allen (1933, p. 4-6) suggests that *D. d. dorsalis* and *D. d. sonoriensis* must intergrade. The lizards were very abundant in creosote flats where they quickly escaped into burrows beneath the creosote bushes. One burrow from which a *Dipsosaurus* was dug was a simple tunnel six inches deep and about a foot and a half from entrance to exit. Other burrows investigated were more extensive and more complex, extending down as much as two feet below the surface and sometimes three or four feet horizontally, with many entrances. The burrows appeared to be abandoned mammal excavations.

In coloration our specimens are fairly typical of *D. dorsalis dorsalis* although the longitudinal lines of the dorsal pattern and the transverse tail bars are less distinct than in *D. d. dorsalis* from farther north in Arizona. In scutellation they show a more marked tendency toward *D. d. sonoriensis* for of 20 specimens only 7 (35%) have two rows of scales separating the nasal and rostral plates, 4 (20%) have one row on one side and two rows on the **other** and 9 (45 %) have a single row of scales on both sides. Even in Arizona specimens only 62 per cent have the two rows of scales between the nasal and rostral plates on both sides. These data indicate that the difference in number of scales separating the nasal and rostral plates is not sufficient to give the 70 per cent separation usually required in diagnosing subspecies. However, a good distinction is possible if note is taken of the following differences in coloration:

D. d. dorsalis—Dorsal pattern of light yellow spots which tend to be arranged in irregular longitudinal rows; these spots separated from one another by a brown reticulum in which there are distinct wavy longitudinal lines that tend to straighten and become more distinct on the sides at the expense of the transverse connections; no appreciable darkening in the shoulder region; transverse bars on tail very distinct.

D. d. sonoriensis—Dorsal pattern of fewer yellow spots which are arranged in transverse rows separated by areas of brown, approximately as wide as the rows of spots; no indication of longitudinal lines except for dash-like markings on lower side; irregular black markings and light spots outlined in black in the region of the shoulder and slightly posterior; transverse bars of tail rather indistinct.

Callisaurus draconoides gabbii Cope

27 miles n.e. of Puerto Penasco (1889).

This one specimen, collected beside the highway in a creosote flat, is typical of *C. d. gabbii*. The fewer femoral pores (averaging 15.5), the longer tail (58.3 per cent of the total length), and the longer hind legs (averaging **97.8** per cent of the snout-vent length) distinguish this specimen from those of *C. d. ventralis* collected 25 miles northeast on the same highway.

Callisaurus draconoides ventralis (Hallowell)

14 miles s.w. of Sonoyta (1891); 15.2 miles s.w. of Sonoyta (1890).

The two specimens listed above indicate the probable area of intergradation of *C. d. ventralis* and *C. d. gabbii* in northwestern Sonora more precisely than has previously been possible. They differ from the specimen of *C. d. gabbii* taken 25 miles to the southwest in the larger number of femoral pores (averaging 18.5) and in the shorter hind legs (averaging 88.5 per cent of the snout-vent length). The tails of both are incomplete.

***Sceloporus magister magister* Hallowell**

24.8 miles n.e. of Puerto Peñasco (1892-3).

The two specimens of *S. m. magister* were collected on large mesquites. One attempted to escape into a pack rat nest at the base of the tree in which it was first seen.

***Uta stansburiana stejnegeri* Schmidt**

10 miles s.w. of Sonoyta (1906-7); 15.2 miles s.w. of Sonoyta (1911); 31 miles s.w. of Sonoyta (1894-905); 2.2 miles n.e. of Puerto Peñasco (1908-10).

Twenty-two specimens have a hind leg length averaging 71 per cent of the body length. This lizard was the most abundant species of reptile everywhere that collections were made along the highway between Sonoyta and Puerto Peñasco.

***Cnemidophorus tessellatus tessellatus* (Say)**

26 miles s.w. of Sonoyta (1912); 31 miles s.w. of Sonoyta (1913-4, 1924); 11.9 miles n.e. of Puerto Peñasco (1915); 2.2 miles n.e. of Puerto Peñasco (1916).

Our specimens from 40 miles northeast of Puerto Peñasco southwest to the Gulf have a ventral coloration typical of *C. t. tessellatus*. The ventrum is white except for the chest and throat, which are bluish grey, and the chin, which is light grey with black markings. One collected in a sand dune area. 2.2 miles northeast of Puerto Peñasco, has a much lighter dorsal pattern than those of a series from Arizona. However, a much better series would be necessary to demonstrate consistent differences between the coastal Sonoran population and the northern population. In the area in which we collected, *tessellatus* was restricted to a coastal strip approximately 40 miles wide. How far south along the coast this subspecies extends before it gives way to *C. t. aethiops* (of which we have examined typical specimens from Guaymas, Sonora) is a problem for future collectors.

***Cnemidophorus tessellatus aethiops* Cope**

10 miles s.w. of Sonoyta (1917-20).

Typical adult specimens of *C. t. aethiops*, with the throat and anterior portion of the ventrum black, were taken 10 miles southwest of Sonoyta. Unfortunately, juveniles, with their typical lined dorsum, were not available to confirm this identification.

Salvadora hexalepis hexalepis (Cope)

28.4 miles n.e. of Puerto Peñasco (1921).

The divided loreal, the one supralabial contacting the eye, and the presence of the lateral dark stripe on both the third and fourth rows of dorsal scales of our specimen mark it as a typical *S. h. hexalepis*. This record conforms with Bogert's concept (1945) of the subspecies *Salvadora hexalepis hexalepis*.

Chionactis occipitalis annulata (Baird)

9.2 miles n.e. of Puerto Peñasco (1922).

Our specimen appears to be the first definite record of this subspecies from Mexico. It was taken alive on the highway at 8:15 P. M., August 9. There is a total of 45 black bands, of which only the last 21 are complete. In life there were narrow red saddles in the light interspaces between the bands, but these have faded almost completely since the specimen was preserved.

Hypsiglena ochrorhyncha ochrorhyncha Cope

4.8 miles s.w. of Sonoyta (1923).

In coloration and scutellation this specimen is a typical *H. o. ochrorhyncha*. The median nuchal spot, which is approximately 10 scales long and three and one-half scales wide at the widest point, extends slightly onto the parietal plates. The lateral nuchal spots are uninterrupted. It is a female with 190 ventrals, 47 caudals, and 16 dorsal scale rows above the anus. It was taken alive on the road on August 8, 10:30 P. M.

Crotalus atrox Baird and Girard

13 miles s.w. of Sonoyta (1925).

This fine specimen of *Crotalus atrox* was collected on the shoulder of the highway at approximately 11:00 P. M. on August 8.

Crotalus cerastes laterorepens Klauber

4.5 miles s.w. of Sonoyta (1926).

Our specimen, a male typical of this subspecies, confirms Klauber's statement (1944) that "As nearly as can be determined from two specimens, Sonora should be considered *laterorepens* territory." The coloration of indefinitely outlined yellowish-brown dorsal blotches and postocular dark streak, both on a tan background, and the black proximal matrix lobe of the rattle are typical of *laterorepens*. The specimen also has the typical 23 rows of dorsal scales, but the number of ventrals, 138, is slightly low for a male of this subspecies. It was taken alive on the road at 8:45 P. M. on August 8.

Crotalus scutulatus scutulatus (Kennicott)

15 miles s.w. of Sonoyta (1927).

The single specimen of this rattler was found alive on the highway on **August 8**, at approximately **10:45 P. M.**

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